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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/718,486

11/20/2003

John L. Guthrie II

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EXAMINER

LEROUX, ETIENNE PIERRE

ART UNIT

PAPER NUMBER

2161

DATE MAILED: 05/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/718,486

Applicant(s)

GUTHRIE, JOHN L.

Examiner

Etienne P. LeRoux

Art Unit

2161

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

*Claim Status*

Claims 1-24 are pending. Claims 1-24 are rejected as detailed below.

*Claim Rejections - 35 USC § 112*

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 3 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 3 recites "wherein the agent is configured to convert SCSI formatted offset address associated with at least one of the first blocks of data into a terabyte/gigabyte/megabyte/sub-megabyte address of the storage associated with at least one of the first nodes of data to be sent to the storage as part of the translation of the first blocks of data into the corresponding first nodes of data." A skilled artisan would not be able to make and use the present invention because the specification does not contain a clear and concise description of the process whereby an agent converts a SCSI formatted offset address per the above claim limitation.

*Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 9, 14-16 and 18-21 are rejected under 35 U.S.C. 102(e) as being anticipated by  
Pub No 2003/0182317 issued to Kahn et al (hereafter Kahn).

Claim 9 and 21:

Kahn discloses

an initiator [client 11, Fig 1] having a file containing data apportioned into blocks of data  
[data blocks paragraph 44];

a storage containing data segregated into nodes [disk 130, Fig 1]

a snapshot server communicatively link to the initiator and the storage, the snapshot  
server including a node level snapshot management configured to generate snapshots of the  
nodes of data contained in the storage [file server generates snapshots, paragraph 44]

an agent configured to translate the blocks of data received from the initiator into  
corresponding nodes of data to be sent to the storage, the agent configured to translate nodes of

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data received from the storage into corresponding blocks of data to be sent to the initiator  
[storage adapter 128, Fig 1]

Claims 14 and 19:

Kahn discloses:

in a memory of an initiator [client 11, Fig 1], storing an indicator of a collection of files,  
each of the files containing data apportioned into blocks of data [data blocks, paragraph 44];

linking the initiator with a snapshot server using a first block level communication [CIFS  
or NFS protocol over network 140, Fig 1, paragraph 23]

linking the snapshot server with a storage using a second block level communication  
[storage adapter 128 to disk array 130, Fig 1];

in the snapshot server translating blocks of data received from the initiator into  
corresponding nodes of data to be sent to the storage; and generating a snapshot of at least one of  
the nodes of data contained in the storage [file server generates snapshots, paragraph 44]

Claim 15:

Kahn discloses wherein storing in memory stores the indicator as one of the following: a  
drive letter and a directory name [Fig 6].

Claim 16:

Kahn discloses determining location in the storage where to send the nodes of data from a  
write command received from the initiator along with the blocks of data [paragraph 26]

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Claim 18:

Kahn discloses wherein generating a snapshot of at least one of the nodes of data includes: copying a first node having child nodes to a new node that points to the child nodes of the first node; and when a node is modified to generate a modified node: replacing ancestor nodes of the modified node that have not yet been replaced with a new node; replacing the modified node with a new node that points to the same child nodes of the replaced node; and effecting the modification on the new node [paragraph 44]

Claim 20:

Kahn discloses determining an origination location in the storage of the nodes of data from a read command received from the initiator and from the snapshot server, requesting from storage, transmission of the nodes of data [paragraph 5]

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 4, 8 and 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kahn in view of Pub No US 2003/0014207 issued to Arnaout et al (hereafter Arnaout).

Claims 1, 4 and 10-13:

Kahn discloses:

a collection of files, each of the files containing data apportioned into blocks of data [paragraph 44] ;

a first block level hardware interface; a first block level communication interface configured to transmit and receive the blocks of data via the first block level hardware interface [Fig 1, filer 120]

a storage containing data segregated into nodes [Fig 1, 130]; and a snapshot server including [paragraph 44]:

a node level hardware interface communicatively linked with the storage [paragraph 44]

a second block level hardware interface communicatively linked to the first block level hardware interface of the initiator [Fig 1, 130];

a second block level communication interface configured to exchange blocks of data with the initiator via the second block level hardware interface [Fig 1, 120 – 130];

a node level snapshot management configured to generate snapshots of the nodes of data contained in the storage [paragraph 44];

Kahn discloses the elements of the claimed invention as noted above but does not disclose an agent associated with the collection of files, the agent configured to translate first blocks of data received from the initiator into corresponding first nodes of data to be sent via the node level hardware interface to the storage, the agent configured to translate second nodes of data received from the storage into corresponding second blocks of data to be sent to the initiator. Arnaout discloses an agent associated with the collection of files, the agent configured to translate first blocks of data received from the initiator into corresponding first nodes of data

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to be sent via the node level hardware interface to the storage, the agent configured to translate second nodes of data received from the storage into corresponding second blocks of data to be sent to the initiator [paragraph 57]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kahn to include an agent associated with the collection of files, the agent configured to translate first blocks of data received from the initiator into corresponding first nodes of data to be sent via the node level hardware interface to the storage, the agent configured to translate second nodes of data received from the storage into corresponding second blocks of data to be sent to the initiator as taught by Arnaout for the purpose of breaking down large files into chunks for transmission [paragraph 57].

Claim 2:

The combination of Kahn and Arnaout discloses the elements of claim 1 and furthermore discloses wherein storing in memory stores the indicator as one of the following: a drive letter and a directory name [Kahn, Fig 6].

Claim 8:

The combination of Kahn and Arnaout discloses the elements of claim 1 and furthermore discloses wherein the agent is further configured to determine an origination location in the storage of the second nodes of data from a read command received from the initiator, and wherein the agent is configured to request from the storage transmission of the second nodes of data [Kahn, paragraph 5].



Claims 3, 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Kahn and Arnaout and further in view of Pub No US 2004/0019706 issued to Smith (hereafter Smith), as best examiner is able to ascertain.

Claim 3:

The combination of Kahn and Arnaout discloses the elements of claim 1 as noted above but does not disclose wherein the agent is configured to convert SCSI formatted offset address associated with at least one of the first blocks of data into a terabyte/gigabyte/megabyte/sub-megabyte address of the storage associated with at least one of the first nodes of data to be sent to the storage as part of the translation of the first blocks of data into the corresponding first nodes of data.” Smith discloses wherein the agent is configured to convert SCSI formatted offset address associated with at least one of the first blocks of data into a terabyte/gigabyte/megabyte/sub-megabyte address of the storage associated with at least one of the first nodes of data to be sent to the storage as part of the translation of the first blocks of data into the corresponding first nodes of data [Abstract]. It would have been obvious to one of ordinary skill in the art at the time the invention was filed to modify the combination of Kahn and Arnaout to include wherein the agent is configured to convert SCSI formatted offset address associated with at least one of the first blocks of data into a terabyte/gigabyte/megabyte/sub-megabyte address of the storage associated with at least one of the first nodes of data to be sent to the storage as part of the translation of the first blocks of data into the corresponding first nodes of data.” A skilled artisan would not be able to make and use the present invention because the specification does not contain a clear and concise description of the process whereby

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an agent converts a SCSI formatted offset address per the above claim limitation as taught by Smith for the purpose of interfacing with a non-SCSI disk drive [Abstract]

Claim 5:

The combination of Kahn, Arnaout and Smith discloses the elements of claim 1 as noted above and furthermore, discloses wherein the first and second block level hardware interfaces are compliant with SCSI standards and the node level hardware interface is compliant with IDE standards [Smith: Abstract]

Claim 7:

The combination of Kahn, Arnaout and Smith discloses the elements of claim 1 as noted above and furthermore, discloses wherein the agent is further configured to determine a location in the storage where to send the first nodes of data from a write command received from the initiator along with the first blocks of data [Smith, Abstract]

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Kahn and Arnaout and further in view of Pub No US 2002/0129123 issued to Johnson et al (hereafter Johnson).

Claim 6:

The combination of Kahn and Arnaout discloses the elements of claim 1 as noted above but does not disclose wherein the initiator is configured to use data block sizes of 512 kilobytes. Johnson discloses wherein the initiator is configured to use data block sizes of 512 kilobytes [paragraph 55]. It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the combination of Kahn and Arnaout to include wherein the

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initiator is configured to use data block sizes of 512 kilobytes as taught by Johnson for the purpose of conforming with industry standard block size in order to increase the market size for the product.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kahn in view of Pub No US 2003/0051109 issued to Cochran (hereafter Cochran).

Claim 17:

Kahn discloses the elements of claim 14 as noted above but does not disclose wherein the translating includes converting SCSI formatted offset address associated with at least one of the blocks of data into a terabyte/gigabyte/megabyte/sub-megabyte address of the storage associated with at least one of the nodes of data to be sent to the storage as part of the translation of the blocks of data into the corresponding nodes of data. Cochran discloses wherein the translating includes converting SCSI formatted offset address associated with at least one of the blocks of data into a terabyte/gigabyte/megabyte/sub-megabyte address of the storage associated with at least one of the nodes of data to be sent to the storage as part of the translation of the blocks of data into the corresponding nodes of data [paragraph 7]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kahn to include wherein the translating includes converting SCSI formatted offset address associated with at least one of the blocks of data into a terabyte/gigabyte/megabyte/sub-megabyte address of the storage associated with at least one of the nodes of data to be sent to the storage as part of the translation of the blocks of data into the corresponding nodes of data as taught by Cochran for the purpose of storing electronic data in a disk array [paragraph 7].

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kahn in view of Pub No US 2002/0152354 issued to Harmer (hereafter Harmer).

Claim 22:

Kahn discloses the elements of claim 21 as noted above but does not disclose detecting at least one node of the first snapshot having no pointer pointing to the at least one node and upon detection, reallocating storage space of the storage used for the at least one node as unused space. Harmer discloses detecting at least one node of the first snapshot having no pointer pointing to the at least one node and upon detection, reallocating storage space of the storage used for the at least one node as unused space. Harmer discloses detecting at least one node of the first snapshot having no pointer pointing to the at least one node and upon detection, reallocating storage space of the storage used for the at least one node as unused space. Harmer discloses detecting at least one node of the first snapshot having no pointer pointing to the at least one node and upon detection, reallocating storage space of the storage used for the at least one node as unused space [paragraph 8]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kahn to include the above limitation for the purpose of managing clusters of memory [paragraph 8].

Claims 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kahn in view of Pub No US 2004/0158573 issued to Bradley et al (hereafter Bradley).

Claim 23:

Kahn discloses linking a plurality of initiators to a server through a first block level communication; linking the server to a storage through a second block level communication, the

storage having an initial physical storage capacity; directing data commands from each of the plurality of initiators through one of a plurality of agents running on the server to the storage [Fig 1 and paragraph 44]

Kahn discloses the elements of the claimed invention as noted above but does not disclose coding in each of the plurality of agents a designation indicating capacity allocation to be used to respond to queries from the plurality of initiators regarding total storage available to the querying initiator, the sum of the capacity allocations as designated being a total capacity allocation larger in size than the initial physical storage capacity of the storage; monitoring the storage for total amount of physical space on the storage being used by at least one of the plurality of initiators; and generating an alert when the total amount of physical space on the storage being used by at least one of the plurality of initiators reaches a predetermined fraction of the total amount of physical space available on the storage. Bradley discloses coding in each of the plurality of agents a designation indicating capacity allocation to be used to respond to queries from the plurality of initiators regarding total storage available to the querying initiator, the sum of the capacity allocations as designated being a total capacity allocation larger in size than the initial physical storage capacity of the storage; monitoring the storage for total amount of physical space on the storage being used by at least one of the plurality of initiators; and generating an alert when the total amount of physical space on the storage being used by at least one of the plurality of initiators reaches a predetermined fraction of the total amount of physical space available on the storage [Abstract, Fig 4]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kahn to include coding in each of the plurality of agents a designation indicating capacity allocation to be used to respond to

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queries from the plurality of initiators regarding total storage available to the querying initiator, the sum of the capacity allocations as designated being a total capacity allocation larger in size than the initial physical storage capacity of the storage; monitoring the storage for total amount of physical space on the storage being used by at least one of the plurality of initiators; and generating an alert when the total amount of physical space on the storage being used by at least one of the plurality of initiators reaches a predetermined fraction of the total amount of physical space available on the storage as taught by Bradley for the purpose of informing a user of the state of the storage unit.

Claim 24:

The combination of Kahn and Bradley discloses the elements of the claimed invention as noted above but does not disclose adding additional physical storage space to the storage in response to the generating an alert. Official Notice is taken that adding additional physical storage space to the storage in response to the generating an alert is well-known and expected in the art. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Kahn and Bradley to include adding additional physical storage space to the storage in response to the generating an alert for the purpose of providing additional storage to allow for system growth,

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Etienne P. LeRoux whose telephone number is (571) 272-4022. The examiner can normally be reached Monday through Friday between 8:00 am and 4:30 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Gaffin can be reached on (571) 272-4146. The fax phone number for the organization where this application or proceeding is assigned is (571)-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Etienne LeRoux

5/17/2006

A handwritten signature in black ink, appearing to read 'Etienne LeRoux', is written over the typed name and date.